

## THE UNEVEN DEVELOPMENT OF MANUFACTURING IN THE SOUTHEAST, 1950-1990<sup>1</sup>

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This paper uses a geographic shift-share model to examine the uneven development of manufacturing at the state and local scales in nine southeastern states from 1950 to 1990. The research compares changes in employment between states and among six types of local areas within each state. The types of local areas studied are: central city areas, urban fringe areas, large towns, small towns, rural nonfarm areas, and rural farm areas. The results indicate that: (1) the development of manufacturing in the Southeast was geographically uneven from 1950 to 1990 at both state and local scales, but more so at the local level; (2) development at the local scale shifted from rural nonfarm in the 1950s, to small and large towns in the 1960s, to urban central and fringe areas in the 1970s, and to a wide range of local areas in the 1980s; (3) development became less uneven between states over time for all types of local areas, and by the 1980s the degree of uneven development closely corresponded to the degree of urbanization (ruralization) of the local area, with small towns and rural areas being the most evenly developed and urban central areas being the most unevenly developed; (4) development became less uneven among the six types of local areas within every state over time, with Alabama, Kentucky, North Carolina, and Virginia being the most evenly developed and Florida, Mississippi, and South Carolina being the least evenly developed by the 1980s; and (5) labor costs were a significant determinant of the uneven development of manufacturing at the local scale, but the dominance of this factor appears to have subsided in the 1980s.

Key words: geographic shift-share, manufacturing, Southeast, uneven development.

**INTRODUCTION.** The development of manufacturing in the Southeast has always been uneven. Dating back to colonial times, some industries have been favored over others and some areas have grown faster than others. Furthermore, the pattern of industrial and geographical development has changed significantly over time. From the end of the Civil War to the end of the 19th century, manufacturing in the Southeast was dominated by industries that were closely tied to the agricultural and natural resources of the region, such as food processing, tobacco products, lumber, furniture, and iron and steel. These were followed by textiles and chemicals in the early part of the 20th century, apparel in the 1950s and 1960s, and machinery and electrical products from the 1970s through the 1990s.

Prior to 1940, manufacturing's importance to the Southeast's economy lagged far behind that of the North. In 1870, the nine states in the Southeast had a combined share of just 6% of the nation's manufacturing jobs, compared to the 83%

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share in the 15 states that comprised the Northern industrial core, extending from the Great Lakes to New England. By 1950, the Southeast's share had risen to 13% and the North's share had fallen to 69%. By 1990, the Southeast's share was 24% and the North's share was 45%. In addition to capturing a larger share of the nation's employment, by the 1990s manufacturing had become as important to the economies of southeastern states as it was to northern states. The average proportion of people employed in manufacturing for states in the Southeast in 1990 was 20%, which was the same as the average for states in the Midwest and 4% more than the average for states in the Northeast.

Within the Southeast, the geographic development of manufacturing has also been persistently uneven. In 1870, the most developed state was Kentucky, with 30,000 manufacturing workers, and the least developed was Florida, with 2,000 workers. Kentucky's share of national manufacturing employment in 1870 was 1.5% and Florida's share was 0.1%. By 1950, the leading state was North Carolina, with 350,000 manufacturing workers, while Florida, again the least developed, had 66,000 workers. Their respective national shares in 1950 were 2.9% and 0.6%. By 1990, North Carolina was again the leader in the region with 633,000 workers, giving it a 5.1% share of the nation's manufacturing employment, while Mississippi had the lowest number, with 181,000 workers, giving it a national share of 1.5%.

The goal of this paper is to examine the uneven development of manufacturing at multiple scales in the Southeast from 1950 to 1990. Specifically, this research demonstrates that: (1) development in the region was geographically uneven throughout the time period, but it was more pronounced at the local scale than at the state scale; (2) development at the local scale shifted between different types of local area over time; (3) development became more evenly distributed among states over time; (4) development became more evenly distributed within states over time; and (5) labor costs were a significant determinant of the uneven development of manufacturing at the local scale, but the dominance of this factor appears to have subsided toward the end of the period.

*EXPLAINING UNEVEN DEVELOPMENT.* From a political economy perspective, uneven development is a necessary feature of the capitalist space-economy (Smith, 1990). The development of some areas is necessary to generate profit. The underdevelopment of other areas can create the conditions for future growth elsewhere. If the profitability of production in developed areas declines significantly, capital tends to flow from areas of surplus capital with poor rates of return to areas of surplus labor with higher rates of return. When capital does move between areas, it is generally triggered by spatial differentials in the profit rate, the primary component of which is labor costs (Smith, 1990). Periods of economic growth are typically accompanied by a narrowing of spatial differentials in economic well-being and a reduction in the level of uneven development. Periods of economic decline are

typically accompanied by an increase in spatial differentials in economic well-being and a rise in the level of uneven development (Smith and Dennis, 1987).

If local capital is geographically immobile or place dependent in areas threatened with decline, making it infeasible for capital to move to more profitable areas, local and extralocal coalitions of businesses, government and others may be established to promote profitable local economic development (Harvey, 1985; Cox, 1998). Areas that remain developed over the long term may also retain their profitability and competitiveness through superior technological advancement or their political-economic control over the economies of other places (Storper and Walker, 1989). Areas that remain underdeveloped over the long term may be forced to remain so if it supports the interests of producers in more developed areas; for example, such areas may be sources of low-cost raw materials and cheap labor.

Storper and Walker (1989) suggested that industrial development produces four different "spatial patterns of industrialization." The first pattern is characterized as "localization," in which a new industry has the locational freedom to develop in a wide range of areas, being relatively unconstrained by the location of existing sources of labor, supplies, and raw materials or by the location of markets. The second pattern is "clustered," and refers to the development of an integrated production complex in a given region. The third pattern is "dispersed," and refers primarily to the spread of branch plants from an established industrial region to peripheral and underdeveloped areas. The fourth pattern refers to a "shifting center," in which an entire industry moves from a developed area to one that is, typically, peripheral and underdeveloped.

Massey (1995) argued that the spatial division of labor can be geographically organized in a variety of ways, called "spatial structures of production." One example given by Massey is the "locationally-concentrated spatial structure," in which there are no intrafirm hierarchies. A second example is the "cloning branch-plant spatial structure," which involves a hierarchy of relations of ownership, but not of production. A third example is the "part-process spatial structure" in which plants in a region are connected by place in terms of both ownership and the technical division of labor. Massey suggested that the successive layering of different spatial divisions of labor and associated spatial structures of production in different places over time results in an accumulated industrial pattern that is geographically uneven and locally unique. Consequently, local geographies and spatial structures become increasingly important in shaping the pattern of future investment and production. Given this line of reasoning, we would expect that the pattern of development in a region such as the Southeast to be not only locally diverse, but also to become more pronounced at the local scale compared to other scales.

Developed and underdeveloped spaces are produced at a variety of scales, whose size, internal spatial organization, and external connections are determined by the actions of the economic actors, such as firms, workers, and the state, that have a vested interest in these spaces (Swyngedouw, 1997). For example, the early

development of the branch-plant space-economy of the Southeast was strongly localized, due in large measure to the need for branch-plant firms to create local monopsony conditions where wages could be strongly controlled. This proved particularly easy to accomplish in the local labor markets of rural areas and small towns due to the limited mobility of workers in these places. As the spatial organization of the social relations of production change over time, such as growing competition in an increasingly integrated global economy, trade and investment connections between spaces change. As a result, scale configurations of developed and underdeveloped spaces change (Swyngedouw, 1997). For example, the current trend toward a global market, encouraged by the trade liberalization policies enforced by institutions such as GATT, NAFTA, and WTO, will probably have a significant impact on the ability of rural areas and small towns in the Southeast to compete globally as low wage economies (Glasmeier and Leichenko, 1996).

The process of uneven development is generally accompanied by a rescaling of the spatial division of labor (Smith, 1990; Swyngedouw, 1997: see also MacLeod and Goodwin, 1999, on the related rescaling of the state). For example, the Manufacturing Belt of the United States was spatially fragmented as a result of the economic downturn of the 1970s and 1980s (Smith and Dennis, 1987; Hanham, A., 1995), and the industrial core of Japan was spatially fragmented in response to economic stagnation in the late 1980s and early 1990s (Hanham, R. and Banasick, 2000). Although this rescaling is a continuous process, it appears to become accentuated during periodic long-term declines in profitability, such as the breakdown of national-scale Fordism and the rise of global production after the 1960s.

*MANUFACTURING DETERMINANTS: PREVIOUS RESEARCH.* The development of manufacturing in the Southeast has been largely shaped by three factors. The first and most important factor is the presence of a low-wage, nonunionized labor force, which has been a major determinant of manufacturing development from the 1870s to the present. Low wages have made labor-intensive industrial production especially profitable in the Southeast. After the Civil War, northern investors began to develop labor-intensive industries such as food processing, textiles, lumber, and furniture in the region (Billington, 1971). In addition, traditionally capital-intensive industries such as iron and steel also were developed using more labor-intensive production processes than were used in the North (Cobb, 1984; Wilson, 1992). The post-bellum planter class in the region actively supported low-wage, labor-intensive production in nonrural areas to retain greater control of their means of production, namely labor and land (Wiener, 1979; Wilson, 1995).

In the early part of the 20th century, the low-wage Southeast was increasingly viewed by northern investors as a place to relocate production from the North (Billington, 1971; Cobb, 1984). The most prominent example was the shifting of the textile industry from its center in New England to small towns throughout the Piedmont of North Carolina and South Carolina. In the 1920s, wage rates in North

Carolina were 70% of the wages of comparable workers in the Northeast (Wood, 1986). Wilson (1995) argued that by the 1930s, the manufacturing economy of the Southeast had been transformed into a branch-plant periphery of the Fordist economy of the North, largely because of its low labor costs. In 1939, more than 70% of the value of manufactured goods in the South was produced in branch plants (Wilson, 1995).

The Southeast continued to develop largely as a branch-plant economy after World War II due to the continuing attraction of a low-wage, nonunionized labor force (Raitz, 1988; Johnson, 1989, 1991). During the 1950s and 1960s, the development of manufacturing in the region was dominated by the growth of the low-wage, labor-intensive apparel industry (Johnson, 1985). In the 1970s and 1980s, labor-intensive, high-tech industries spread though the region, again attracted by low labor costs (Johnson, 1988, 1989). During this period, the Southeast had fewer high-tech firms, a larger share of high-tech branch plants, and one of the lowest start-up rates for new high-tech firms compared to other regions (Malecki, 1985).

The second factor to shape the development of manufacturing in the Southeast from World War II to the present has been the aggressive policy of state and local governments, in alliance with state and local businesses, to sell the region to external investors. This strategy has used a wide variety of incentives, such as tax exemption schemes, revenue bonds, right-to-work legislation, and the provision of public infrastructure and services (Lyson, 1989; Cobb, 1993). The success of this factor was facilitated by the disproportionately high level of federal spending in the region, which has been consistently higher than in northern regions on a per capita basis since World War II. Military expenditures and highway construction, in particular, have had significant multiplier and spillover effects in the Southeast.

The third factor to shape the development of manufacturing in the region has been the rapid population growth of the Southeast since the 1970s. This growth has created a consumer market that is attractive to capital-intensive industries that employ workers with more skills and higher wages than is traditional in the region's labor-intensive industries. State and local governments have also increased their efforts to attract capital-intensive industries to the region since the 1970s (Cobb, 1993). In the late 20th century, the labor cost advantage of the Southeast has diminished considerably. In 1960, the average wage in the metropolitan areas of southeastern states was 78% of the average wage for metropolitan areas nationally, and the average wage in rural nonfarm areas in the region was 69% of their national counterparts. Thirty years later the wage advantage of the Southeast had eroded considerably, in part because of the industrial restructuring in the North. In 1990, wages in the Southeast's metropolitan and rural nonfarm areas were 88% and 87% of their respective national figures. The wage gap for both metropolitan and rural areas had diminished significantly, but the trend was particularly striking for rural areas. The wage advantage of the region had narrowed to such a degree that in the 1980s some low-wage industries, such as apparel, began to move out of the region

for low-wage overseas locations. Low-cost labor no longer appears to be the dominant determinant of manufacturing development in the region. Other factors such as market size, the presence of skilled labor, technological advantage, and the growing influence of external economies of scale have also become important determinants.

*UNEVEN DEVELOPMENT, 1950–1990: PREVIOUS RESEARCH.* There has been a large quantity of research on the geography of manufacturing in the Southeast. Much of it supports the thesis that the development of manufacturing has been geographically uneven since the 1950s. This research has typically examined development at the regional, state, and local levels at different time periods, but it has not systematically examined the progression of manufacturing's uneven development at multiple scales throughout the region, which is the goal of this paper.

Regionally, Neimi (1983) and Connaughton and Madsen (1990) have shown that the Southeast's rate of growth in, and its national share of, manufacturing output were both larger than most of the other regions in the country from the 1950s to the 1980s. Rigby (1995) found that the Southeast's share of national manufacturing capital stock rose during the same period. Machinery and electrical products gained most, while textiles and primary metals lost the most ground. Shift-share analyses by Norton and Rees (1979) and Rigby (1992) showed that, despite having the most negative mix of manufacturing sectors in the country, the Southeast had one of the highest differential effects in the country, indicating that the region's industries generally outperformed their national counterparts from the 1950s to the 1980s.

At the state scale, Smith and Dennis (1987) and Peet (1983) showed that most states in the Southeast had above-average manufacturing employment growth in the 1950s and 1960s and that most states in the region had below-average growth rates in the 1970s. Fisher (1981) showed that although manufacturing diversity increased in the region's states in the 1960s and 1970s, they were still more concentrated than the national average. Finally, Wood (1986) examined the historical development of manufacturing in North Carolina from 1880 to 1980 and found that it can best be explained in terms of the state's peripheral role in the development of northern capitalism. He argued that North Carolina's weak working class was instrumental in the successful development of the state's textile industry at the beginning of the century, the apparel industry at mid-century, and high-tech sectors more recently.

At the local scale, Fisher (1979) and Rabiega and Wood (1974) showed that manufacturing tended to locate disproportionately in nonmetropolitan areas of the Southeast from the 1950s to the early 1970s. Lonsdale and Browning (1971) showed that the metropolitan versus nonmetropolitan location preference of manufacturers in the region's states was uneven in the 1960s, findings supported by Hartshorn (1974). Lineback (1968, 1972), Prunty and Ojala (1974), Cromley and Leinbach (1981), Leinbach and Cromley (1982), Walters and Wheeler (1984), Till (1986), Gilmer and Pulsipher (1986, 1989), Holloway and Bawden (1992), and Hart and Morgan (1995) have all highlighted the important role played by small towns

and rural areas in the development of manufacturing throughout the Southeast from the 1950s to the 1980s. Johnson (1985, 1989, 1991, 1994) has shown that branch plants in older industries, such as apparel, as well as in newer high-tech industries, such as electronics, located in small towns in the South to take advantage of low wages and business-friendly labor-management relations. Johnson (1990) has also shown that some low-wage, labor-intensive manufacturing sectors have tended to grow disproportionately in African-American nonmetropolitan areas of the South.

Stuart (1968), Schul and Hayes (1968), Fisher and Park (1980), and Wheeler and Park (1981) have documented the increasing suburbanization of manufacturing in metropolitan areas of the Southeast in the 1960s and 1970s. Wheeler (1974, 1992) showed that large manufacturing firms in the 1960s and corporate headquarters in the 1970s and 1980s tended to locate in metropolitan areas. Johnson (1997), Lyson (1989), and Malecki (1995) have all pointed out that manufacturing in the Southeast became increasingly metropolitan in the 1970s and 1980s. Metropolitan manufacturing became more capital intensive, reliant on skilled labor, and associated with command and control functions. Nonmetropolitan manufacturing continued to be labor intensive, reliant on low-wage labor, and dominated by branch-plant production.

*METHODS OF ANALYSIS AND DATA SOURCES.* This research uses a geographic shift-share model to examine the uneven development of manufacturing in the states of the Southeast from 1950 to 1990. Traditional shift-share analysis estimates the contribution of different types of industry to employment change. For example, employment growth in a state may be due to the presence of certain industries that have outperformed their counterparts at the national scale, whereas employment decline in another region might reflect the presence of other industries whose regional performance has been weaker than at the national scale. Rather than focusing on the contribution of a state's industries to a state's employment growth or decline, this paper uses a geographic shift-share model to estimate the contribution of six types of local areas to each state's employment growth or decline (see also Hanham, R. and Banasick, 2000). The six types are: (1) central city areas, (2) urban fringe areas, (3) large towns, (4) small towns, (5) rural nonfarm areas, and (6) rural farm areas. These categories were created by the U.S. Bureau of the Census to represent data by area type in the decennial Census of Population (U.S. Bureau of the Census, various years). Using the shift-share model in this way, one may find, for example, that employment growth in a state is due to the fact that its medium-sized towns have outperformed their national counterparts, while employment decline in another state is due to the poor economic performance of its metropolitan areas relative to their national counterparts.

The "classic" version of the shift-share model is used in this research. Several alternative versions of the shift-share model have been developed and could have been used. Loveridge and Selting (1998) undertook a comprehensive comparative

analysis of seven alternative specifications of the shift-share model. They concluded that the original version of the "classic" model is not only as useful as the alternative versions, but it is also easier to interpret. The research presented in this paper discusses only the results for the shift-share differential effect, which measures the degree to which each type of local area in a state either outperformed or lagged behind its national counterparts for any given time period. The sum of the local-area differential effects for a state represents the overall degree to which employment change in that state either outperformed or lagged behind national employment change based on overall performance of the state's local areas. The shift-share mix effect, which measures the degree to which any given state has a mix of local areas that are conducive to employment growth, is not discussed here because of space limitations.

The analysis was undertaken for nine states: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia and for the following periods: 1950-1960, 1960-1970, 1970-1980 and 1980-1990. Manufacturing employment data for types of local area, by year and state, were obtained from the industry of employment by area tabulations published in the U.S. Census of Population (U.S. Bureau of the Census, various years). The analyses for 1960-1970, 1970-1980 and 1980-1990 were based on six types of local areas: central city areas, urban fringe areas, large towns greater than or equal to 10,000 people, small towns between 2,500 and 10,000 people, rural nonfarm areas, and rural farm areas. The 1950-1960 period could only be analyzed for three types of local area (urban, rural nonfarm and rural) because the 1950 Census of Population only publishes area data for these three categories.

*RESULTS: THE STATE DIFFERENTIAL EFFECT.* The estimates of the shift-share differential effect for the states in the Southeast are shown in Table 1. The most striking feature of these results is the positive differential for each state in every decade, which indicates that the aggregate performance of the local areas of every state in the region exceeded their national counterparts in terms of manufacturing employment growth in every decade from 1950 to 1990. The largest differentials for eight of the nine states occurred in the 1960s, indicating that the gap in employment performance between southeastern states and the nation peaked in this decade. The average state differential effect is 18.1% in 1950s, 28.2% in the 1960s, 12.5% in the 1970s, and 8.6% in the 1980s. By the 1980s, most southeastern states were performing much closer to the national norm, and only Florida's differential exceeded 10%.

*RESULTS: THE CONTRIBUTION OF LOCAL AREAS.* The contributions of urban, rural, nonfarm and rural farm areas to each state's differential effect in the 1950s are shown in Table 2. The largest contribution was made by rural nonfarm areas in seven of the nine states. The contributions of rural farm areas were negative in six



TABLE 1  
PERCENTAGE CHANGE IN MANUFACTURING EMPLOYMENT:  
THE STATE DIFFERENTIAL EFFECT<sup>a</sup>

	1950-1960	1960-1970	1970-1980	1980-1990
Alabama	7.1	14.9	6.2	5.8
Florida	83.9	41.5	36.2	28.7
Georgia	6.4	22.4	6.1	9.6
Kentucky	12.6	31.1	7.9	3.3
Mississippi	27.8	37.8	17.5	9.2
North Carolina	2.6	30.6	12.0	5.4
South Carolina	0.4	24.6	9.8	1.5
Tennessee	14.6	33.9	12.4	6.5
Virginia	7.7	17.7	4.9	8.1
Mean	18.1	28.2	12.5	8.6

<sup>a</sup>Calculations by authors.

Source: U.S. Bureau of Census, various years.

TABLE 2  
PERCENTAGE CHANGE IN MANUFACTURING EMPLOYMENT: LOCAL AREA  
CONTRIBUTIONS, 1950-1960<sup>a</sup>

	Urban areas	Rural nonfarm areas	Rural farm areas
Alabama	6.7	14.3	-5.0
Florida	112.5	35.9	-8.8
Georgia	9.7	12.3	-18.7
Kentucky	3.3	28.5	38.3
Mississippi	23.2	35.0	24.7
North Carolina	2.8	3.9	-1.6
South Carolina	-4.1	11.6	-16.3
Tennessee	2.9	35.7	26.0
Virginia	9.5	13.6	-11.2
Mean	18.5	21.2	3.0

<sup>a</sup>Calculations by authors.

Source: U.S. Bureau of Census, various years.

states, reflecting the substantial out-migration from farming communities that took place during this decade.

The contributions of urban central areas, urban fringe areas, large towns, small towns, rural nonfarm areas and rural farm areas to each state's differential effect in

TABLE 3  
PERCENTAGE CHANGE IN MANUFACTURING EMPLOYMENT: LOCAL AREA  
CONTRIBUTIONS, 1960-1990<sup>a</sup>

	1960- 1970	1970- 1980	1980- 1990	1960- 1970	1970- 1980	1980- 1990	1960- 1970	1970- 1980	1980- 1990
Urban central areas				Urban fringe areas			Large towns		
AL	-2.9	31.8	1.4	-8.2	20.8	-1.3	23.0	-11.1	14.8
FL	67.1	32.7	49.0	50.2	106.3	25.5	58.9	-40.4	-7.1
GA	5.6	-0.1	-7.5	63.1	39.2	33.3	16.2	3.8	5.1
KY	25.3	-15.2	-6.6	25.5	-19.4	-3.8	13.4	31.7	-1.6
MS	25.0	135.2	-24.3	2667.1	178.6	40.0	32.3	-0.6	2.0
NC	22.1	47.3	18.7	159.1	317.9	2.7	25.1	-21.2	1.3
SC	12.5	129.2	2.9	26.9	121.1	8.3	35.5	-30.7	-34.4
TN	55.2	17.3	-12.5	-86.1	194.5	15.2	65.9	-6.1	20.5
VA	19.4	17.7	16.9	48.0	42.4	17.3	-7.9	-15.9	-4.3
Mean	25.4	43.9	7.1	327.2	111.2	15.2	29.1	-10.0	-0.4
Small towns				Rural nonfarm areas			Rural farm areas		
AL	70.0	-1.9	7.3	21.5	-0.5	8.4	-23.9	-10.2	0.2
FL	110.5	-29.9	-8.6	-22.2	-9.6	23.2	1.9	2.0	8.3
GA	69.7	5.7	-5.4	15.1	-2.0	7.1	-26.7	-0.7	4.9
KY	98.4	25.1	11.2	24.3	34.8	9.5	46.9	7.0	4.3
MS	76.6	7.7	17.6	42.4	12.0	11.5	-16.8	-24.0	13.1
NC	66.4	-16.0	6.0	28.8	1.4	3.2	-3.9	-17.0	-7.5
SC	65.0	9.1	-1.0	18.1	-9.3	1.3	-28.7	-15.1	36.2
TN	104.7	-7.2	13.6	33.2	10.1	12.4	11.7	-10.9	-9.0
VA	83.7	-3.1	5.3	12.2	-6.8	1.5	-15.9	-12.8	5.0
Mean	82.7	-1.1	5.1	19.2	4.3	8.6	-6.1	-9.0	6.1

<sup>a</sup>Calculations by authors. All numbers expressed as percentages.

Source: U.S. Bureau of Census, various years.

the 1960s, 1970s and 1980s are shown in Table 3. Generally, the contribution of urban central areas to state employment growth was greatest in the 1970s, although the 1960s was also a period of strong growth for these areas in most states. Urban central areas performed poorly in the majority of states during the 1980s, contributing to employment decline in four states. Across the entire period, from 1960 to 1990, the contribution of these areas to state employment change was consistently strong in Florida, North Carolina, and Virginia, consistently weak in Georgia, and changeable in the remaining states.

The contribution of urban fringe areas to state employment change was similar to that of urban central areas. Their largest contribution occurred in the 1970s and, to a lesser extent, in the 1960s. Although their contribution was weakest in the 1980s, urban fringe areas contributed more to employment growth than did urban central areas in six states during this decade. The contribution of these areas was consistently strong from 1960 to 1990 in Florida, Georgia, Mississippi and Virginia, but was changeable in the remaining states.

The contribution of large towns to state employment change peaked in the 1960s in seven states. Their contribution declined considerably in the 1970s, turning negative in seven states. This was followed by a resurgence in eight of the states during the 1980s, although the overall contribution of this type of local area remained far below its performance in the 1960s in all but one state. The contribution of these areas was more changeable than consistent over time. Only Georgia had a positive differential in all three decades, while Virginia had a negative differential in all three. The remaining states fluctuated between positive and negative contributions.

The contribution of small towns was also strongest in the 1960s, with all nine states peaking in this decade. Their contribution was uniformly weaker in the 1970s, with five states turning negative, and in the 1980s, with three negative contributions. As with large towns, however, there was a small resurgence in the 1980s. Only small towns in Kentucky and Mississippi consistently had positive differentials from 1960 to 1990. Their contributions in the other seven states fluctuated over time.

The contribution of rural nonfarm areas peaked in the 1960s in seven states. As with large and small towns, their contribution fell in the 1970s, turning negative in five states, and improved in the 1980s. Rural nonfarm areas made consistently positive contributions from 1960 to 1990 in Kentucky, Mississippi, and Tennessee. Their contribution over time in the remaining states was variable.

The contribution of rural farm areas peaked in the 1980s in six states. Their performance in the 1960s and 1970s was generally negative. These areas consistently outperformed their national counterparts from 1960 to 1990 only in Florida and Kentucky, and consistently lagged them only in North Carolina. Their performance in the other six states was changeable.

Table 4 summarizes the results shown in Table 3 in another form. Table 4 shows which types of local areas made the strongest and weakest contributions, relative to their national counterparts, to each state's employment change in every decade. In the 1950s, the biggest contribution was made by rural nonfarm areas in seven states, and by urban areas and rural farm areas in the other two states. The weakest contribution in the 1950s was made by rural farm areas in six states and by urban areas in the other three states. The 1960s was dominated by small towns, which made the strongest contribution in seven states. Urban fringe areas were the strongest contributors in the remaining two states. Rural farm areas were the

TABLE 4  
STRONGEST AND WEAKEST LOCAL AREA CONTRIBUTIONS

	1950-1960		1960-1970		1970-1980		1980-1990	
	Strongest	Weakest	Strongest	Weakest	Strongest	Weakest	Strongest	Weakest
AL	Rural nonfarm	Rural farm	Small town	Rural farm	Urban center	Large town	Large town	Urban fringe
FL	Urban	Rural farm	Small town	Rural nonfarm	Urban fringe	Large town	Urban center	Small town
GA	Rural nonfarm	Rural farm	Small town	Rural farm	Urban fringe	Rural nonfarm	Urban fringe	Urban center
KY	Rural farm	Urban	Small town	Large town	Rural nonfarm	Urban fringe	Small town	Urban center
MS	Rural nonfarm	Urban	Urban fringe	Rural farm	Urban fringe	Rural farm	Urban fringe	Urban center
NC	Rural nonfarm	Rural farm	Urban fringe	Rural farm	Urban fringe	Large town	Urban center	Rural farm
SC	Rural nonfarm	Rural farm	Small town	Rural farm	Urban center	Large town	Rural farm	Large town
TN	Rural nonfarm	Urban	Small town	Urban fringe	Urban fringe	Rural farm	Large town	Urban center
VA	Rural nonfarm	Rural farm	Small town	Rural farm	Urban fringe	Large town	Urban fringe	Large town

weakest contributors in six states in the 1960s. Rural nonfarm areas, large towns and urban fringe areas were the weakest contributors in the other three states.

Growth in the 1970s was dominated by urban areas. Urban fringe areas were the biggest contributor to state growth in six states, and urban central areas contributed most strongly in two others. Kentucky was the exception to the trend, being dominated by rural nonfarm areas. Weakest contributions were made by large towns in five states, rural farm areas in two states, urban fringe areas in one state and rural nonfarm areas in one state. The pattern of local contributions becomes significantly more fragmented in the 1980s compared to the 1960s and 1970s. The earlier decades tended to be dominated by one type of local area, but in the 1980s local area contributions became widely dispersed. Strongest contributions were made by urban central areas in Florida and North Carolina, by urban fringe areas in Georgia, Mississippi and Virginia, by large towns in Alabama and Tennessee, by small towns in Kentucky and by rural farm areas in South Carolina. Weakest contributions were also widely dispersed in the 1980s. Weakest contributions were made by urban central areas in Georgia, Kentucky, Mississippi and Tennessee, in urban fringe areas in Alabama, in large towns in South Carolina and Virginia, in small towns in Florida and in rural farm areas in North Carolina.

TABLE 5  
BETWEEN-STATE STANDARD DEVIATIONS OF THE DIFFERENTIAL EFFECTS<sup>a</sup>

	1960–1970	1970–1980	1980–1990
Urban central areas	22.4	53.2	23.1
Urban fringe areas	879.7	105.7	15.3
Large towns	22.7	21.0	15.5
Small towns	17.5	15.8	8.7
Rural nonfarm areas	18.1	16.6	6.8
Rural farm areas	24.1	9.9	13.2
State total	9.0	9.7	7.9

<sup>a</sup>Calculations by authors. All numbers expressed as percentages.

Source: U.S. Bureau of Census, various years.

*RESULTS: UNEVEN DEVELOPMENT TRENDS.* In this section we examine whether the development of manufacturing became more or less geographically uneven over time. The analysis excludes the 1950s, because the data for that decade are not compatible with later decades. Table 5 shows the between-state standard deviations of the differential effect for each type of local area and for states as a whole for the 1960s, 1970s, and 1980s. The standard deviation for states as a whole increased from the 1960s to the 1970s and was followed by a decline in the 1980s, suggesting that the level of uneven development at this scale first rose and then fell from 1960 to 1990. At the local scale, a similar trend is also apparent for urban central areas, indicating that the uneven development of city centers throughout the region was most pronounced in the 1970s. The development of urban fringe areas in the region, however, became progressively more even from the 1960s to the 1980s (the large standard deviation for the 1960s is mainly due to the high rate of employment growth for Mississippi, which had a very small number of people employed in manufacturing in urban fringe areas in 1960). The level of uneven development for large towns, small towns, and rural nonfarm areas throughout the region essentially remained unchanged in the 1960s and 1970s, but became significantly less uneven in the 1980s. Rural farm areas became more evenly developed from the 1960s to the 1970s, but then became more uneven in the 1980s.

These results suggest that the geographic development of manufacturing in the Southeast generally became more even at both state and local scales over time. However, the level of uneven development was more pronounced at the local scale than at the state scale for every decade, although the disparity between the two scales had decreased by the 1980s. In addition, the data in Table 5 show that the level of uneven development increasingly corresponded to the degree of urbanization (ruralization) of the local area over time. In the 1960s, there is little correlation between the two. By the 1980s, there was a strong correlation between the standard

TABLE 6  
WITHIN-STATE STANDARD DEVIATIONS OF THE DIFFERENTIAL EFFECTS<sup>a</sup>

	1960-1970	1970-1980	1980-1990
Alabama	36.6	17.5	6.1
Florida	54.2	38.1	22.0
Georgia	40.5	37.6	14.5
Kentucky	33.8	20.4	7.5
Mississippi	1182.1	62.5	21.0
North Carolina	70.6	105.7	8.5
South Carolina	34.6	102.1	25.0
Tennessee	73.0	72.4	13.8
Virginia	43.1	58.0	8.5

<sup>a</sup>Calculations by authors. All numbers expressed as percentages.

Source: U.S. Bureau of Census, various years.

deviation of the differential effect and the degree of urbanization (ruralization) of the local area. Uneven development between the states in the 1980s was most pronounced for urban central areas and decreasingly so for urban fringe areas, large towns, small towns and rural nonfarm areas. The development of rural farm areas is, however, an exception to the trend.

The development of manufacturing in the Southeast also became decreasingly geographically uneven within states over time. Table 6 shows the within-state standard deviations of the local area differential effects for the six types of local area by state for the 1960s, 1970s, and 1980s. The data clearly show that development was more evenly dispersed among the six types of local area in the 1980s than it was in the 1960s for each state in the region. There are, however, variations among states. In the 1980s, within-state development was most uneven in South Carolina, Florida, and Mississippi, and least uneven in Alabama, Kentucky, North Carolina, and Virginia. Georgia and Tennessee had intermediate levels of uneven local area development.

**RESULTS: THE ROLE OF LABOR COSTS.** The theory of uneven development and previous empirical studies of the region both highlight the key role of wages and labor costs in shaping the development of manufacturing. The relation between earnings and local manufacturing development is examined for each decade from 1950 to 1990 in this section. The average wage earnings of full-time workers, both men and women, living in each of the six types of local area in every state was obtained from the U.S. Census of Population (U.S. Bureau of the Census, various years) for 1950, 1960, 1970, and 1980, and expressed as a percentage of the national earnings figures for the corresponding types of area. A simple analysis was then

undertaken by tabulating the number of states in which the type of local area making the largest contribution to state employment change (the local differential effect) for a given decade corresponded with the type of local area having the smallest relative earnings figure, for either men or women, at the beginning of the decade. In the 1950s a match between the lowest local earnings and the largest local differential effect was found for all nine states. In both the 1960s and the 1970s, a match was found in six states. In the 1980s a match was found in only four states. Bearing in mind the likelihood that the result for the 1950s may be distorted by the smaller number of area types in the analysis, the results tend to support the claim that the cost of labor has been a key ingredient in shaping the uneven development of manufacturing in the Southeast.

The analysis also suggests, however, that earnings have played a less decisive role over time, and particularly so in the 1980s. There are a number of possible explanations for this trend. First, it may be that as the wage gap between the Southeast and northern regions narrowed, the long-term attraction of low wages in the Southeast diminished to such a degree that other factors, such as access to markets, economies of scale and scope, the adoption of new production technologies, the availability of skilled labor, and the cost of inputs and energy, played a relatively greater role in manufacturing investment and location decisions. Second, increasing investment in capital-intensive sectors in the region and the movement of labor-intensive sectors overseas in the 1980s may have weakened the long-established link between cheap labor and manufacturing development in the Southeast. Third, the increasingly active efforts on the part of local and state governments in the Southeast to attract investment and subsidize the location of new businesses may have undermined the relation between labor costs and the development of manufacturing.

*CONCLUSION.* The analysis generally supports the theory of uneven development outlined earlier in the paper. Specifically, the findings show that: (1) the development of manufacturing in the Southeast was geographically uneven from 1950 to 1990 at both state and local scales, but more so at the latter scale; (2) development at the local scale shifted from rural nonfarm in the 1950s, to small and large towns in the 1960s, to urban central and fringe areas in the 1970s and to a wide range of local areas in the 1980s; (3) development became less uneven between states over time for all types of local areas, and by the 1980s the degree of uneven development closely corresponded to the degree of urbanization (ruralization) of the local area, with small towns and rural areas being the most evenly developed and urban central areas being the most unevenly developed; (4) development became less uneven among the six types of local areas within every state over time, with Alabama, Kentucky, North Carolina, and Virginia becoming the most evenly developed, and Florida, Mississippi, and South Carolina becoming the least evenly developed by the 1980s; and (5) labor costs were a significant determinant of the uneven

development of manufacturing at the local scale, but the dominance of this factor appears to have subsided in the 1980s.

For much of the second half of the 20th century, the manufacturing spatial division of labor in the Southeast was dominated by a low-wage, labor-intensive, branch-plant spatial structure of production. However, economic development in the region became increasingly metropolitan toward the end of the century. This new spatial division of labor is more capital intensive and requires a more skilled labor force. Geographically, it is characterized by a part-process spatial structure of production and the development of regional production complexes (Massey, 1995; Storper and Walker, 1989). As Malecki (1995) has noted, these changes have placed rural development in the Southeast in jeopardy. As the region becomes increasingly integrated into the global economy, it is the nonmetropolitan areas of the Southeast that face the prospect of underdevelopment, while the region's metropolitan areas become more developed. Further research should explore these divergent trends, using both extensive research designs (see, for example, Jones and Hanham, R., 1995) and intensive case studies.

#### NOTE

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